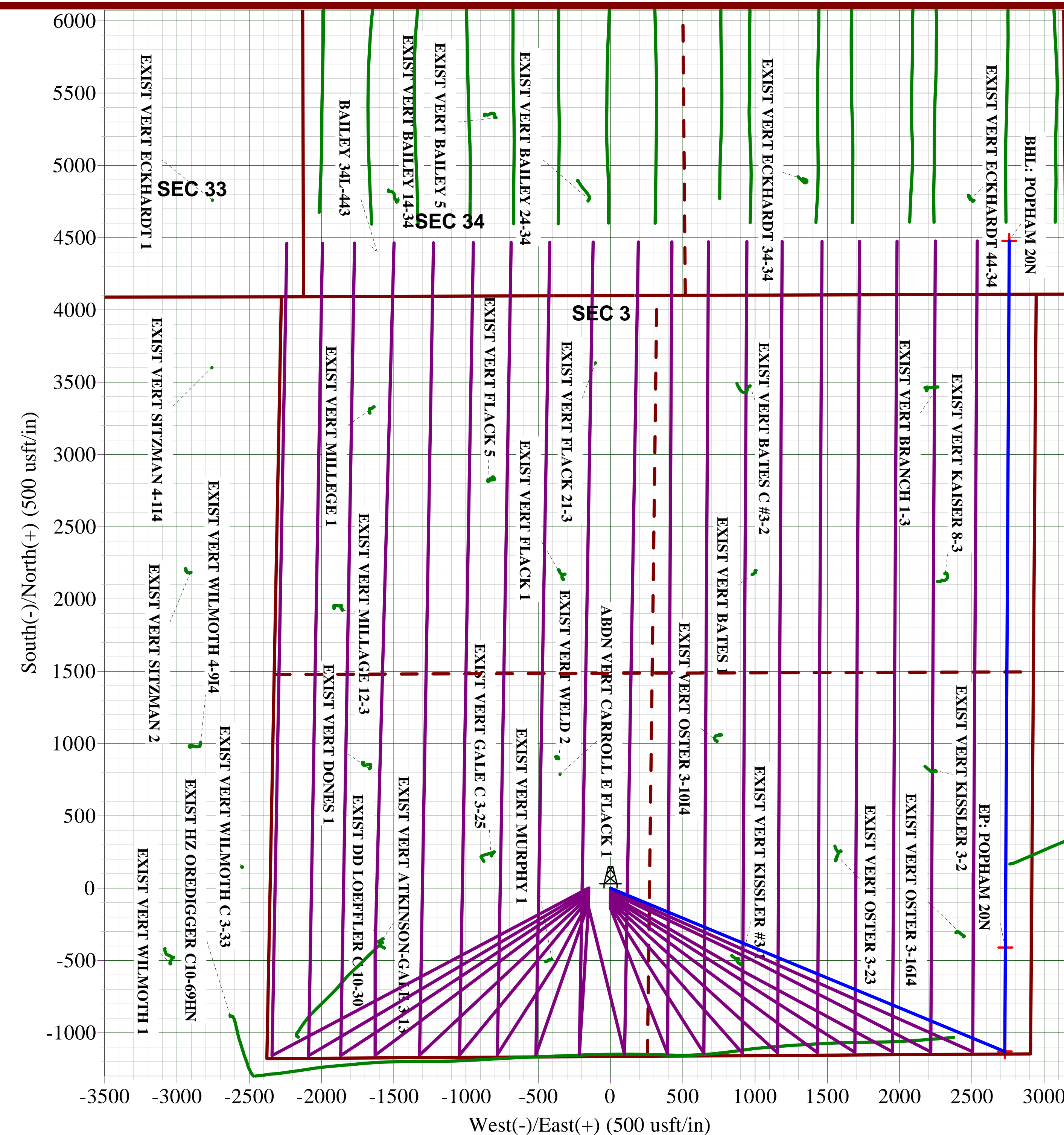
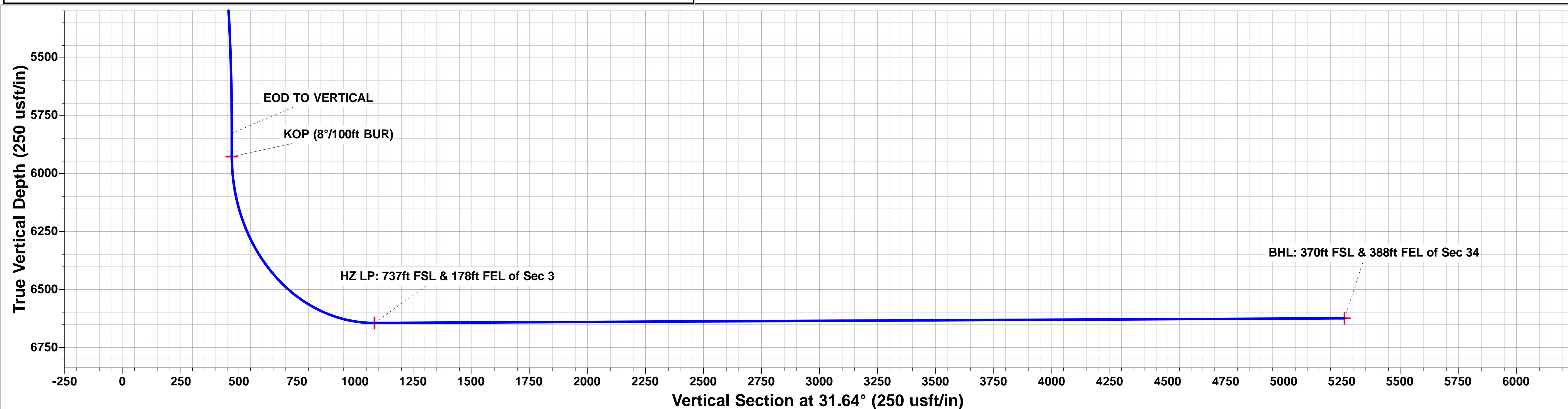
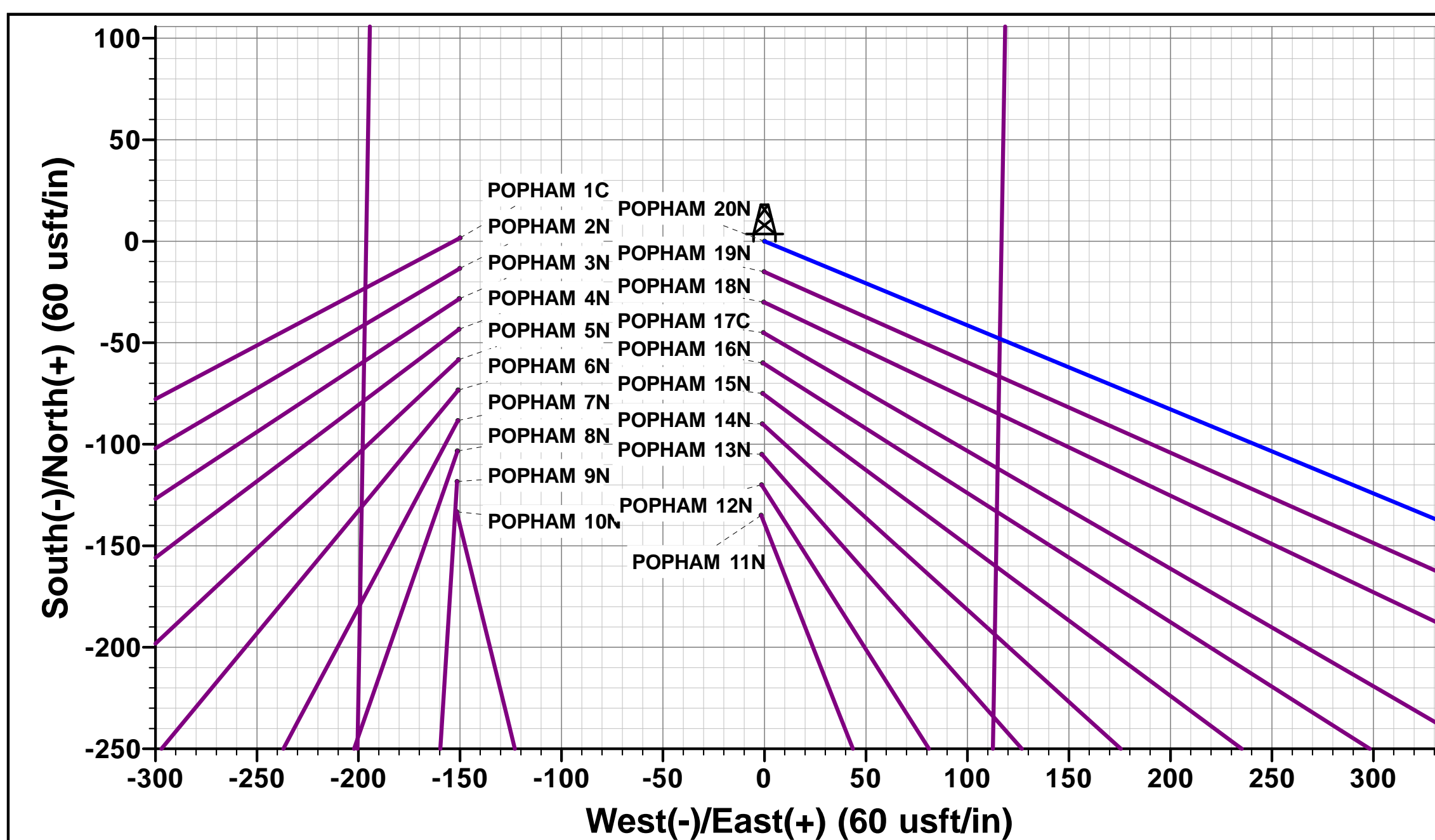
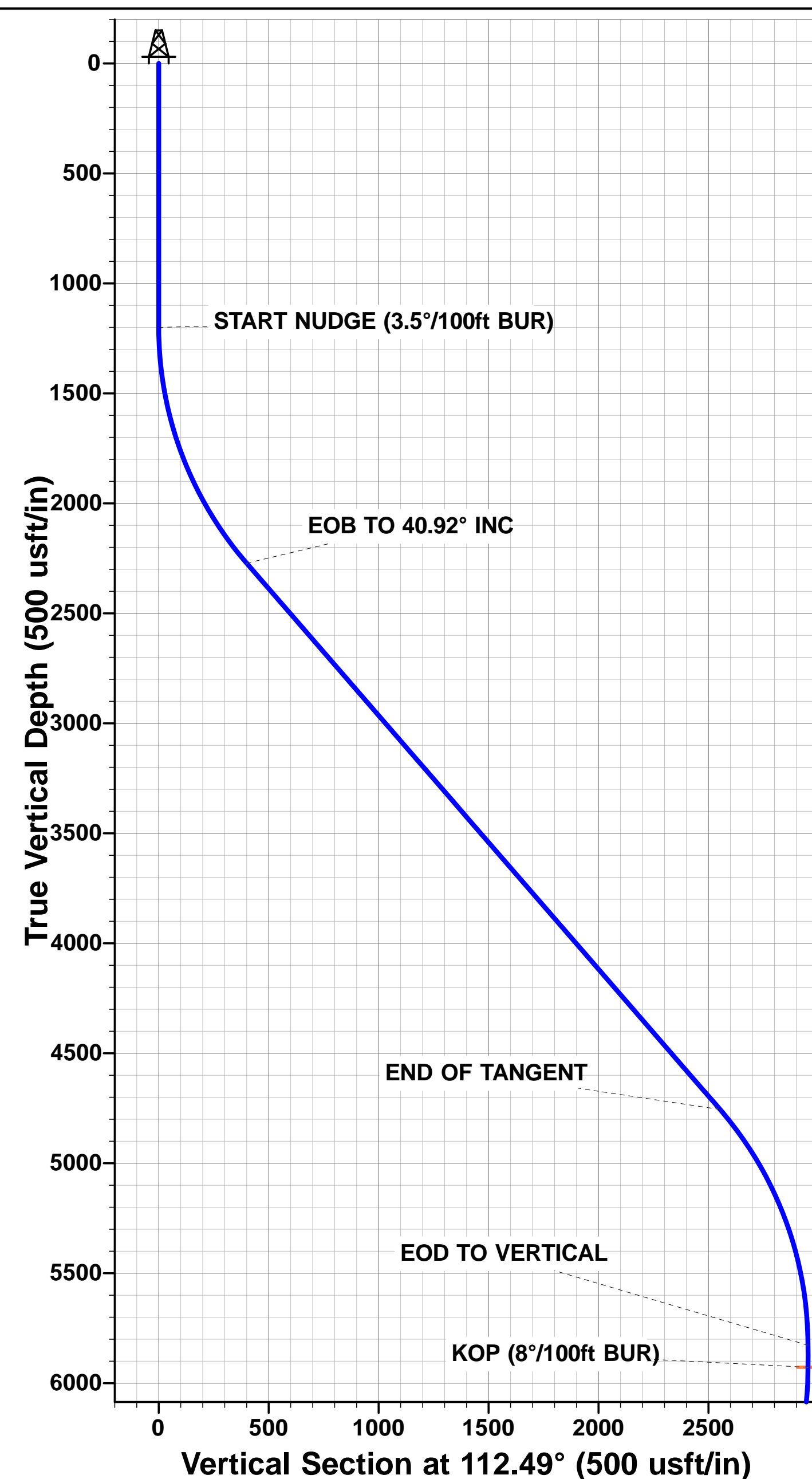


TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation
0.0	0.0	0.00	0.00	0.0	0.0	0.0	0.0	SHL: 1164ft FSL & 2355ft FWL of Sec 3
1200.0	1200.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (3.5°/100ft BUR)
2272.2	2369.1	40.92	112.49	-153.0	369.6	63.6	400.0	EOB TO 40.92° INC
4755.6	5655.5	40.92	112.49	-976.4	2358.4	406.0	2552.5	END OF TANGENT
5827.8	6824.6	0.00	0.00	-1129.4	2728.0	469.6	2952.5	EOD TO VERTICAL
5927.8	6924.6	0.00	0.00	-1129.4	2728.0	469.6	2952.5	KOP (8°/100ft BUR)
6644.0	8052.5	90.23	0.32	-410.3	2732.0	1083.9	3671.6	HZ LP: 737ft FSL & 178ft FEL of Sec 3
6624.0	12941.0	90.24	0.32	4478.1	2759.5	5260.0	8560.1	BHL: 370ft FSL & 388ft FEL of Sec 34

PROPOSED LOCAL COORDINATES:
SHL: 1164ft FSL & 2355ft FWL of Sec 3
HZ LP: 737ft FSL & 178ft FEL of Sec 3
BHL: 370ft FSL & 388ft FEL of Sec 34

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP: POPHAM 20N	5927.8	-1129.4	2728.0	40.334222	-104.527722
EP: POPHAM 20N	6644.0	-410.3	2732.0	40.336195	-104.527707
BHL: POPHAM 20N	6624.0	4478.1	2759.5	40.349614	-104.527607



PDC ENERGY

**WELD COUNTY, COLORADO
SE SW SEC. 3 T4N R64W 6th P.M.
POPHAM 20N**

**ORIGINAL WELLBORE
PROPOSAL #1**

Anticollision Report

19 September, 2017



Anticollision Report



Company:	PDC ENERGY	Local Co-ordinate Reference:	Well POPHAM 20N
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB-EST @ 4683.0usft (Original Well Elev)
Reference Site:	SE SW SEC. 3 T4N R64W 6th P.M.	MD Reference:	KB-EST @ 4683.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	POPHAM 20N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #1	Offset TVD Reference:	Offset Datum

Reference	PROPOSAL #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 100.0usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	19/09/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	12,941.0	PROPOSAL #1 (ORIGINAL WELLBORE)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
SE SW SEC. 3 T4N R64W 6th P.M.						
POPHAM 10N - ORIGINAL WELLBORE - PROPOSAL #	266.0	268.0	201.8	200.9	218.251	CC
POPHAM 10N - ORIGINAL WELLBORE - PROPOSAL #	300.0	301.9	201.8	200.8	187.396	ES
POPHAM 10N - ORIGINAL WELLBORE - PROPOSAL #	12,941.0	12,092.8	2,566.7	2,377.4	13.556	SF
POPHAM 11N - ORIGINAL WELLBORE - PROPOSAL #	300.0	299.0	135.0	133.9	126.036	CC, ES
POPHAM 11N - ORIGINAL WELLBORE - PROPOSAL #	12,941.0	12,141.3	2,336.1	2,138.8	11.843	SF
POPHAM 12N - ORIGINAL WELLBORE - PROPOSAL #	400.0	400.0	119.9	118.4	78.762	CC, ES
POPHAM 12N - ORIGINAL WELLBORE - PROPOSAL #	12,941.0	12,105.2	2,081.6	1,888.1	10.758	SF
POPHAM 13N - ORIGINAL WELLBORE - PROPOSAL #	500.0	499.0	105.0	103.0	53.280	CC, ES
POPHAM 13N - ORIGINAL WELLBORE - PROPOSAL #	12,941.0	12,220.4	1,817.4	1,623.9	9.391	SF
POPHAM 14N - ORIGINAL WELLBORE - PROPOSAL #	600.0	599.0	90.0	87.5	37.177	CC, ES
POPHAM 14N - ORIGINAL WELLBORE - PROPOSAL #	12,941.0	12,216.2	1,571.7	1,382.7	8.317	SF
POPHAM 15N - ORIGINAL WELLBORE - PROPOSAL #	700.0	700.0	75.0	72.1	26.113	CC, ES
POPHAM 15N - ORIGINAL WELLBORE - PROPOSAL #	12,941.0	12,363.3	1,297.6	1,104.4	6.715	SF
POPHAM 16N - ORIGINAL WELLBORE - PROPOSAL #	800.0	800.0	60.0	56.6	18.058	CC, ES
POPHAM 16N - ORIGINAL WELLBORE - PROPOSAL #	12,941.0	12,419.5	1,036.9	843.6	5.364	SF
POPHAM 17C - ORIGINAL WELLBORE - PROPOSAL #	900.0	900.0	45.0	41.3	11.943	CC, ES
POPHAM 17C - ORIGINAL WELLBORE - PROPOSAL #	2,900.0	2,840.4	138.5	104.8	4.105	SF
POPHAM 18N - ORIGINAL WELLBORE - PROPOSAL #	1,000.0	1,000.0	30.0	25.8	7.105	CC, ES
POPHAM 18N - ORIGINAL WELLBORE - PROPOSAL #	3,200.0	3,161.5	76.5	33.1	1.763	SF
POPHAM 19N - ORIGINAL WELLBORE - PROPOSAL #	1,100.0	1,100.0	15.0	10.3	3.215	CC
POPHAM 19N - ORIGINAL WELLBORE - PROPOSAL #	3,200.0	3,174.1	38.9	-5.1	0.885	Level 1, ES, SF
POPHAM 1C - ORIGINAL WELLBORE - PROPOSAL #1	1,166.0	1,168.0	149.9	145.0	30.164	CC
POPHAM 1C - ORIGINAL WELLBORE - PROPOSAL #1	1,200.0	1,200.0	150.0	144.8	29.293	ES
POPHAM 1C - ORIGINAL WELLBORE - PROPOSAL #1	12,941.0	12,832.6	5,003.1	4,821.1	27.491	SF
POPHAM 2N - ORIGINAL WELLBORE - PROPOSAL #1	1,066.0	1,068.0	150.7	146.2	33.331	CC
POPHAM 2N - ORIGINAL WELLBORE - PROPOSAL #1	1,100.0	1,100.0	150.7	146.0	32.274	ES
POPHAM 2N - ORIGINAL WELLBORE - PROPOSAL #1	12,941.0	12,551.9	4,752.2	4,563.2	25.135	SF
POPHAM 3N - ORIGINAL WELLBORE - PROPOSAL #1	966.0	968.0	153.0	148.9	37.569	CC
POPHAM 3N - ORIGINAL WELLBORE - PROPOSAL #1	1,000.0	1,000.0	153.0	148.8	36.251	ES
POPHAM 3N - ORIGINAL WELLBORE - PROPOSAL #1	12,941.0	12,502.5	4,531.0	4,341.3	23.892	SF
POPHAM 4N - ORIGINAL WELLBORE - PROPOSAL #1	866.0	868.0	156.6	152.9	43.227	CC
POPHAM 4N - ORIGINAL WELLBORE - PROPOSAL #1	900.0	900.0	156.6	152.8	41.529	ES
POPHAM 4N - ORIGINAL WELLBORE - PROPOSAL #1	12,941.0	12,369.5	4,257.3	4,068.2	22.513	SF
POPHAM 5N - ORIGINAL WELLBORE - PROPOSAL #1	766.0	768.0	161.6	158.4	50.930	CC
POPHAM 5N - ORIGINAL WELLBORE - PROPOSAL #1	800.0	800.0	161.6	158.3	48.658	ES
POPHAM 5N - ORIGINAL WELLBORE - PROPOSAL #1	12,941.0	12,319.8	3,985.2	3,794.9	20.941	SF
POPHAM 6N - ORIGINAL WELLBORE - PROPOSAL #1	666.0	668.0	167.7	165.0	61.598	CC

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	PDC ENERGY	Local Co-ordinate Reference:	Well POPHAM 20N
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB-EST @ 4683.0usft (Original Well Elev)
Reference Site:	SE SW SEC. 3 T4N R64W 6th P.M.	MD Reference:	KB-EST @ 4683.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	POPHAM 20N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
SE SW SEC. 3 T4N R64W 6th P.M.						
POPHAM 6N - ORIGINAL WELLBORE - PROPOSAL #1	700.0	700.0	167.7	164.9	58.418	ES
POPHAM 6N - ORIGINAL WELLBORE - PROPOSAL #1	12,941.0	12,189.4	3,708.5	3,521.0	19.781	SF
POPHAM 7N - ORIGINAL WELLBORE - PROPOSAL #1	566.0	568.0	174.9	172.7	76.949	CC
POPHAM 7N - ORIGINAL WELLBORE - PROPOSAL #1	600.0	600.0	175.0	172.5	72.239	ES
POPHAM 7N - ORIGINAL WELLBORE - PROPOSAL #1	12,941.0	12,204.0	3,447.4	3,256.1	18.020	SF
POPHAM 8N - ORIGINAL WELLBORE - PROPOSAL #1	466.0	468.0	183.2	181.3	100.420	CC
POPHAM 8N - ORIGINAL WELLBORE - PROPOSAL #1	500.0	500.0	183.2	181.2	92.869	ES
POPHAM 8N - ORIGINAL WELLBORE - PROPOSAL #1	12,941.0	12,123.9	3,179.6	2,985.7	16.396	SF
POPHAM 9N - ORIGINAL WELLBORE - PROPOSAL #1	366.3	367.3	192.2	190.8	139.886	CC
POPHAM 9N - ORIGINAL WELLBORE - PROPOSAL #1	400.0	400.0	192.2	190.6	126.190	ES
POPHAM 9N - ORIGINAL WELLBORE - PROPOSAL #1	12,941.0	12,138.8	2,880.7	2,685.9	14.785	SF

Company:	PDC ENERGY	Local Co-ordinate Reference:	Well POPHAM 20N
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB-EST @ 4683.0usft (Original Well Elev)
Reference Site:	SE SW SEC. 3 T4N R64W 6th P.M.	MD Reference:	KB-EST @ 4683.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	POPHAM 20N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #1	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
SE SW SEC. 3 T4N R64W 6th P.M. (OFFSETS FOR POPHAM)						
ABDN VERT HOFF 31-10 - Wellbore #1 - Wellbore #1	4,067.1	3,511.5	1,326.9	1,289.9	35.802	CC
ABDN VERT HOFF 31-10 - Wellbore #1 - Wellbore #1	4,100.0	3,536.2	1,327.1	1,289.5	35.311	ES
ABDN VERT HOFF 31-10 - Wellbore #1 - Wellbore #1	5,100.0	4,267.6	1,496.2	1,445.3	29.382	SF
EXIST DD HOFFMAN C 02-33D - Wellbore #1 - Wellbore	8,632.7	7,404.8	36.2	-24.1	0.600	Level 1, CC, ES, SF
EXIST HZ SUDEN 34M-223 - Wellbore #1 - Wellbore #1	12,941.0	11,092.0	1,797.1	1,618.5	10.062	CC, ES, SF
EXIST HZ SUDEN 34M-423 - Wellbore #1 - Wellbore #1	12,941.0	11,065.0	2,035.8	1,860.0	11.579	CC, ES, SF
EXIST HZ SUDEN 34R-203 - Wellbore #1 - Wellbore #1	12,941.0	11,081.0	1,093.2	914.8	6.127	CC, ES, SF
EXIST HZ SUDEN 34R-323 - Wellbore #1 - Wellbore #1	12,941.0	11,162.0	542.9	362.5	3.009	CC, ES, SF
EXIST HZ SUDEN 34R-343 - Wellbore #1 - Wellbore #1	12,941.0	11,135.0	1,346.6	1,167.9	7.533	CC, ES, SF
EXIST HZ SUDEN 34R-423 - Wellbore #1 - Wellbore #1	12,941.0	11,245.0	727.9	549.8	4.086	CC, ES, SF
EXIST HZ SUDEN 34U-243 - Wellbore #1 - Wellbore #1	12,941.0	11,118.0	132.6	-33.8	0.797	Level 1, CC, ES, SF
EXIST HZ SUDEN 34U-403 - Wellbore #1 - Wellbore #1	12,941.0	11,309.0	387.6	230.4	2.466	CC, ES, SF
EXIST VERT BATES 1 - Wellbore #1 - Wellbore #1	10,651.4	6,624.1	1,739.4	1,681.7	30.148	CC
EXIST VERT BATES 1 - Wellbore #1 - Wellbore #1	10,700.0	6,623.9	1,740.1	1,681.6	29.740	ES
EXIST VERT BATES 1 - Wellbore #1 - Wellbore #1	11,600.0	6,620.5	1,981.3	1,907.0	26.686	SF
EXIST VERT BATES C #3-2 - Wellbore #1 - Wellbore #1	11,931.3	6,571.6	1,874.3	1,794.0	23.321	CC
EXIST VERT BATES C #3-2 - Wellbore #1 - Wellbore #1	12,000.0	6,574.1	1,875.6	1,793.9	22.974	ES
EXIST VERT BATES C #3-2 - Wellbore #1 - Wellbore #1	12,800.0	6,604.0	2,065.6	1,969.0	21.378	SF
EXIST VERT BRANCH 1-3 - Wellbore #1 - Wellbore #1	11,911.9	6,600.0	563.0	483.0	7.040	CC, ES
EXIST VERT BRANCH 1-3 - Wellbore #1 - Wellbore #1	12,000.0	6,595.9	569.8	488.3	6.991	SF
EXIST VERT ECKHARDT 34-34 - Wellbore #1 - Wellbor	12,941.0	6,475.0	1,530.3	1,432.3	15.609	CC, ES, SF
EXIST VERT ECKHARDT 44-34 - Wellbore #1 - Wellbor	12,941.0	6,300.0	503.6	425.3	6.431	CC, ES, SF
EXIST VERT FLACK 1 - Wellbore #1 - Wellbore #1	1,211.2	1,219.9	2,160.8	2,157.5	657.568	CC, ES
EXIST VERT FLACK 1 - Wellbore #1 - Wellbore #1	12,941.0	6,603.7	3,863.0	3,764.2	39.104	SF
EXIST VERT FLACK 5 - Wellbore #1 - Wellbore #1	0.0	0.0	2,948.0			
EXIST VERT FLACK 5 - Wellbore #1 - Wellbore #1	12,941.0	6,580.2	3,972.6	3,873.9	40.259	SF
EXIST VERT GALE C 3-25 - Wellbore #1 - Wellbore #1	1,206.9	1,197.5	852.7	849.5	264.536	CC, ES
EXIST VERT GALE C 3-25 - Wellbore #1 - Wellbore #1	12,941.0	6,530.9	5,623.8	5,525.4	57.130	SF
EXIST VERT KAISER 8-3 - Wellbore #1 - Wellbore #1	10,582.5	6,580.9	474.1	418.4	8.515	CC, ES
EXIST VERT KAISER 8-3 - Wellbore #1 - Wellbore #1	10,700.0	6,580.6	488.5	430.8	8.473	SF
EXIST VERT KISSLER #3-1 - Wellbore #1 - Wellbore #1	3,283.0	2,933.1	126.4	101.6	5.098	CC, ES
EXIST VERT KISSLER #3-1 - Wellbore #1 - Wellbore #1	3,300.0	2,945.7	126.9	101.9	5.075	SF
EXIST VERT KISSLER 3-2 - Wellbore #1 - Wellbore #1	9,294.0	6,585.2	553.1	515.8	14.844	CC
EXIST VERT KISSLER 3-2 - Wellbore #1 - Wellbore #1	9,300.0	6,585.4	553.1	515.8	14.817	ES
EXIST VERT KISSLER 3-2 - Wellbore #1 - Wellbore #1	9,400.0	6,587.8	563.2	524.6	14.593	SF
EXIST VERT MURPHY 1 - Wellbore #1 - Wellbore #1	100.0	76.5	638.0	637.9	3,776.688	CC, ES
EXIST VERT MURPHY 1 - Wellbore #1 - Wellbore #1	12,941.0	6,500.0	5,929.0	5,830.4	60.156	SF
EXIST VERT OSTER 3-1014 - Wellbore #1 - Wellbore #1	2,141.0	2,047.3	1,223.5	1,215.6	155.147	CC
EXIST VERT OSTER 3-1014 - Wellbore #1 - Wellbore #1	2,200.0	2,093.8	1,224.0	1,215.4	143.411	ES
EXIST VERT OSTER 3-1014 - Wellbore #1 - Wellbore #1	11,400.0	6,652.6	2,731.4	2,660.7	38.643	SF
EXIST VERT OSTER 3-1614 - Wellbore #1 - Wellbore #1	5,500.0	4,578.3	639.8	580.4	10.777	SF
EXIST VERT OSTER 3-1614 - Wellbore #1 - Wellbore #1	8,152.6	6,592.8	340.6	309.7	11.039	CC, ES
EXIST VERT OSTER 3-23 - Wellbore #1 - Wellbore #1	3,806.0	3,305.0	840.5	807.6	25.508	CC, ES
EXIST VERT OSTER 3-23 - Wellbore #1 - Wellbore #1	4,300.0	3,691.3	896.2	856.5	22.568	SF
EXIST VERT WELD 2 - Wellbore #1 - Wellbore #1	0.0	15.0	964.2			
EXIST VERT WELD 2 - Wellbore #1 - Wellbore #1	100.0	113.6	964.2	964.0	4,585.893	ES
EXIST VERT WELD 2 - Wellbore #1 - Wellbore #1	12,941.0	6,665.9	4,747.2	4,648.4	48.039	SF

Company:	PDC ENERGY	Local Co-ordinate Reference:	Well POPHAM 20N
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB-EST @ 4683.0usft (Original Well Elev)
Reference Site:	SE SW SEC. 3 T4N R64W 6th P.M.	MD Reference:	KB-EST @ 4683.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	POPHAM 20N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #1	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
SW SW SEC. 34 T5N R64W 6th P.M.						
ABDN VERT CARROLL E FLACK 1 - Wellbore #1 - Desi	1,200.0	1,196.0	863.6	838.0	33.800	CC, ES
ABDN VERT CARROLL E FLACK 1 - Wellbore #1 - Desi	10,100.0	6,631.7	3,206.9	3,027.6	17.894	SF
EXIST DD LOEFFLER C 10-30 - Wellbore #1 - Wellbore	1,109.2	1,116.0	1,642.8	1,638.9	415.051	CC, ES
EXIST DD LOEFFLER C 10-30 - Wellbore #1 - Wellbore	12,941.0	6,716.4	7,384.5	7,269.5	64.223	SF
EXIST HZ CHESNUT 27G-203 - Wellbore #1 - Wellbore	12,941.0	13,724.5	4,779.0	4,542.9	20.241	CC, ES, SF
EXIST HZ CHESNUT 27G-423 - Wellbore #1 - Wellbore	12,941.0	13,972.0	4,419.4	4,181.1	18.541	CC, ES, SF
EXIST HZ CHESNUT 27K-203 - Wellbore #1 - Wellbore	12,941.0	13,900.0	3,733.2	3,496.7	15.785	CC, ES, SF
EXIST HZ CHESNUT 27K-323 - Wellbore #1 - Wellbore	12,941.0	14,120.0	3,124.5	2,899.0	13.860	CC, ES, SF
EXIST HZ CHESNUT 27K-343 - Wellbore #1 - Wellbore	12,941.0	13,920.0	4,092.5	3,855.0	17.227	CC, ES, SF
EXIST HZ CHESNUT 27K-403 - Wellbore #1 - Wellbore	12,941.0	14,160.0	3,436.9	3,211.5	15.251	CC, ES, SF
EXIST HZ CHESNUT 27O-243 - Wellbore #1 - Wellbore	12,941.0	14,066.0	2,775.5	2,549.8	12.298	CC, ES, SF
EXIST HZ CHESNUT 27O-303 - Wellbore #1 - Wellbore	12,941.0	14,196.0	2,453.9	2,227.0	10.813	CC, ES, SF
EXIST HZ OREDIGGER C10-69HN - Wellbore #1 - Well	7,450.0	11,253.0	423.4	322.1	4.181	SF
EXIST HZ OREDIGGER C10-69HN - Wellbore #1 - Well	7,500.0	11,253.0	415.4	317.4	4.239	ES
EXIST HZ OREDIGGER C10-69HN - Wellbore #1 - Well	7,526.5	11,253.0	414.3	318.6	4.328	CC
EXIST VERT ATKINSON-GALE 3-13 - Wellbore #1 - We	508.0	500.0	1,611.7	1,610.3	1,134.939	CC
EXIST VERT ATKINSON-GALE 3-13 - Wellbore #1 - We	600.0	584.9	1,611.9	1,610.3	979.546	ES
EXIST VERT ATKINSON-GALE 3-13 - Wellbore #1 - We	12,941.0	6,667.3	6,528.5	6,429.7	66.020	SF
EXIST VERT BAILEY 14-34 - Wellbore #1 - Wellbore #1	12,941.0	6,525.0	4,311.0	4,212.2	43.638	CC, ES, SF
EXIST VERT BAILEY 24-34 - Wellbore #1 - Wellbore #1	12,941.0	6,500.0	3,017.3	2,918.8	30.635	CC, ES, SF
EXIST VERT BAILEY 5 - Wellbore #1 - Wellbore #1	12,941.0	6,603.9	3,734.4	3,635.0	37.590	CC, ES, SF
EXIST VERT DONES 1 - Wellbore #1 - Wellbore #1	1,200.0	1,196.4	1,860.0	1,856.7	561.818	ES
EXIST VERT DONES 1 - Wellbore #1 - Wellbore #1	1,201.1	1,197.4	1,860.0	1,856.8	570.683	CC
EXIST VERT DONES 1 - Wellbore #1 - Wellbore #1	12,941.0	6,687.6	5,745.3	5,646.4	58.084	SF
EXIST VERT ECKHARDT 1 - Wellbore #1 - Design #1	1,200.0	1,200.0	5,500.4	5,474.8	214.934	CC
EXIST VERT ECKHARDT 1 - Wellbore #1 - Design #1	12,941.0	6,624.0	5,521.5	5,292.2	24.085	ES, SF
EXIST VERT FLACK 21-3 - Wellbore #1 - Design #1	12,081.8	6,619.6	2,858.7	2,645.4	13.403	CC
EXIST VERT FLACK 21-3 - Wellbore #1 - Design #1	12,100.0	6,619.5	2,858.8	2,645.2	13.382	ES
EXIST VERT FLACK 21-3 - Wellbore #1 - Design #1	12,800.0	6,616.6	2,947.6	2,721.0	13.011	SF
EXIST VERT MILLAGE 12-3 - Wellbore #1 - Wellbore #1	0.0	12.6	2,671.5			
EXIST VERT MILLAGE 12-3 - Wellbore #1 - Wellbore #1	12,941.0	6,587.0	5,319.3	5,220.6	53.888	SF
EXIST VERT MILLEGE 1 - Wellbore #1 - Wellbore #1	0.0	0.0	3,709.8			
EXIST VERT MILLEGE 1 - Wellbore #1 - Wellbore #1	1,200.0	1,204.9	3,709.9	3,706.9	1,244.400	ES
EXIST VERT MILLEGE 1 - Wellbore #1 - Wellbore #1	12,941.0	6,624.5	4,581.7	4,482.9	46.401	SF
EXIST VERT SITZMAN 2 - Wellbore #1 - Wellbore #1	1,202.8	1,216.9	3,634.1	3,630.9	1,132.011	CC, ES
EXIST VERT SITZMAN 2 - Wellbore #1 - Wellbore #1	12,941.0	6,525.0	6,138.7	6,040.1	62.271	SF
EXIST VERT SITZMAN 4-114 - Wellbore #1 - Design #1	1,200.0	1,215.0	4,536.7	4,510.9	176.206	CC, ES
EXIST VERT SITZMAN 4-114 - Wellbore #1 - Design #1	12,941.0	6,639.0	5,586.2	5,356.8	24.353	SF
EXIST VERT WILMOTH 1 - Wellbore #1 - Wellbore #1	0.0	6.9	3,086.9			
EXIST VERT WILMOTH 1 - Wellbore #1 - Wellbore #1	12,941.0	6,760.0	7,622.6	7,523.5	76.908	SF
EXIST VERT WILMOTH 4-914 - Wellbore #1 - Wellbore #	1,200.0	1,216.2	3,008.6	3,005.3	910.041	ES
EXIST VERT WILMOTH 4-914 - Wellbore #1 - Wellbore #	1,204.5	1,220.8	3,008.6	3,005.3	922.829	CC
EXIST VERT WILMOTH 4-914 - Wellbore #1 - Wellbore #	12,941.0	6,700.0	6,646.1	6,547.1	67.101	SF
EXIST VERT WILMOTH C 3-33 - Wellbore #1 - Wellbore	1,208.5	1,223.1	2,552.5	2,549.3	788.623	CC, ES
EXIST VERT WILMOTH C 3-33 - Wellbore #1 - Wellbore	12,941.0	6,644.2	6,850.3	6,751.9	69.597	SF